

Application Serial No.: 10/799,460
Attorney Docket No.: 0160115

List of Claims:

Claim 1 (Currently Amended): A method of using a microprocessor for improving pitch determination, the method comprising:

- obtaining an input voiced speech signal;
- segmenting said input voiced speech signal into a plurality of windows of a sample size for pitch lag determination;
- selecting a target window of said plurality of windows at an original position;
- calculating a total energy of said target window by summing an energy of each of a plurality of samples within said target window;
- sliding said target window in a first direction, with respect to said original position, by a sample to redefine said target window;
- computing said total energy of said target window after said sliding;
- repeating said sliding and said computing, for a pre-defined number of samples to obtain a total energy for each of said target windows;
- determining a maximum total energy among every said total energy obtained from said target windows; and
- computing a pitch correlation based on said target window having said maximum total energy.

Claim 2 (Previously Presented): The method of claim 1, wherein after said repeating and prior to said determining, said method further comprising:

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sliding said target window in a second direction opposite to said first direction, with respect to said original position, by a sample to redefine said target window;

computing said total energy of said target window after said sliding said target window in said second direction; and

repeating said sliding said target window in said second direction and said computing, for said pre-defined number of samples to obtain a total energy for each of said target windows.

Claims 3-4 (Cancelled)

Claim 5 (Previously Presented): The method of claim 1, wherein said sliding maintains said sample size for each of said target windows.

Claim 6 (Previously Presented): The method of claim 1, wherein said computing said total energy includes adding an energy value of an added sample and subtracting an energy value of a removed sample to said target window as a result of said sliding.

Claim 7 (Previously Presented): A computer program product comprising:
a computer usable medium having computer readable program code embodied therein for improving pitch determination, said computer readable program code configured to cause a computer to perform:

obtaining an input voiced speech signal;

segmenting said input voiced speech signal into a plurality of windows of a sample size

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for pitch lag determination;

selecting a target window of said plurality of windows at an original position;

calculating a total energy of said target window by summing an energy of each of a plurality of samples within said target window;

sliding said target window in a first direction, with respect to said original position, by a sample to redefine said target window;

computing said total energy of said target window after said sliding;

repeating said sliding and said computing, for a pre-defined number of samples to obtain a total energy for each of said target windows;

determining a maximum total energy among every said total energy obtained from said target windows; and

computing a pitch correlation based on said target window having said maximum total energy.

Claim 8 (Previously Presented): The computer program product of claim 7, wherein after said repeating and prior to said determining, said method further comprising:

sliding said target window in a second direction opposite to said first direction, with respect to said original position, by a sample to redefine said target window;

computing said total energy of said target window after said sliding said target window in said second direction; and

repeating said sliding said target window in said second direction and said computing, for said pre-defined number of samples to obtain a total energy for each of said target windows.

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Claims 9-10 (Cancelled)

Claim 11 (Previously Presented): The computer program product of claim 7, wherein said sliding maintains said sample size for each of said target windows.

Claim 12 (Previously Presented): The computer program product of claim 7, wherein said computing said total energy includes adding an energy value of an added sample and subtracting an energy value of a removed sample to said target window as a result of said sliding.

Claim 13 (Currently Amended): A speech coding device including a microprocessor for improving pitch determination, the speech coding device comprising elements for:

- obtaining an input voiced speech signal;
- segmenting said input voiced speech signal into a plurality of windows of a sample size for pitch lag determination;
- selecting a target window of said plurality of windows at an original position;
- calculating a total energy of said target window by summing an energy of each of a plurality of samples within said target window;
- sliding said target window in a first direction, with respect to said original position, by a sample to redefine said target window;
- computing said total energy of said target window after said sliding;
- repeating said sliding and said computing, for a pre-defined number of samples to obtain

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a total energy for each of said target windows;

determining a maximum total energy among every said total energy obtained from said target windows; and

computing a pitch correlation based on said target window having said maximum total energy.

Claim 14 (Previously Presented): The device of claim 13, wherein after said repeating and prior to said determining, said device further comprising elements for:

sliding said target window in a second direction opposite to said first direction, with respect to said original position, by a sample to redefine said target window;

computing said total energy of said target window after said sliding said target window in said second direction; and

repeating said sliding said target window in said second direction and said computing, for said pre-defined number of samples to obtain a total energy for each of said target windows.

Claim 15 (Previously Presented): The device of claim 13, wherein said sliding maintains said sample size for each of said target windows.

Claim 16 (Previously Presented): The device of claim 13, wherein said computing said total energy includes adding an energy value of an added sample and subtracting an energy value of a removed sample to said target window as a result of said sliding.

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Claim 17 (New): The method of claim 1 further comprising coding said input voiced speech signal using said pitch correlation.

Claim 18 (New): The computer program product of claim 7, wherein after said computing said pitch correlation, said method further comprises coding said input voiced speech signal using said pitch correlation.

Claim 19 (New): The device of claim 13 further comprising an element for coding said input voiced speech signal using said pitch correlation.